DRAFT MEETING MINUTES
WATER POLLUTION CONTROL ADVISORY COUNCIL
Friday, January 6th, 2017
Metcalf Building
1520 E. Sixth Ave, Helena, MT 59620

PRESENT

Council Members Present:
Mitchell Leu (phone)
Karen Sanchez (phone)
Trevor Selch
Kathleen Williams (phone)
Stevie Neuman (phone)
Earl Salley (phone)
Michael Wendland
Craig Workman

Council Members Absent:
Dude Tyler

Montana Department of Environmental Quality Staff Members Present:
Lisa DeWitt
Myla Kelly
Darrin Kron
Rich Morse
Timmie Smart
Amy Steinmetz

No Members of the Public Present

CALL TO ORDER

Chairperson Trevor Selch called the meeting to order at 10:00 a.m.

APPROVAL OF AGENDA

Chairperson Selch moved to approve the agenda. There was no opposition; the motion carried.

APPROVAL OF MINUTES

Mr. Selch moved to accept the November 18th, 2016 meeting minutes as distributed; Mr. Michael Wendland seconded. There was no opposition; the motion carried.

Mr. Selch next spoke about the reapplication to WPCAC, saying that emails have been sent about reapplying. He directed people who are not intending to reapply to let him or Ms. Amy Steinmetz know. Mr. Selch said that Ms. Barbara Chillcott has taken a new position with DNRC and will no longer be a member. He encouraged those who are reapplying to get their paperwork in, but was not sure on when the governor will be making new appointments. Mr. Selch also mentioned that he got Ms. Chillcott to serve as vice-chair for 2016 with the idea that she would take the chair position, but now that she has left that won't happen. He wanted people who are interested in the position to keep this in mind for discussion at the end of the meeting.

BREIFING ITEMS

Columbia Falls Aluminum Company (CFAC) Superfund Site Briefing

Ms. Lisa DeWitt is with DEQ in the Federal Superfund Section which is part of the Remediation Division at DEQ. She was assigned to work with the Columbia Falls Aluminum site, which is located outside of Columbia Falls near the south end of Glacier (National Park). Ms. DeWitt said the company covers about 225 acres and for many years operated as an aluminum reduction facility with many different owners. The current owner is the Columbia Falls Aluminum Company which is a subsidiary of Glencore, which is another name often seen in the news.

Ms. DeWitt said that over the life of the facility a huge amount of aluminum was produced; over 180 tons per year. The aluminum process was done in a pot room, also known as Building 1, which covers over 40 acres. Ms. DeWitt said there is a lot of work to be done in this building that operated until 2009, when market conditions tanked, suspending operations and the closure in 2015. She thinks this was a big hit on the economy in Columbia Falls and said that since that time there have been a number of thoughts as to what the facility could be used for. Ms. DeWitt said there has also been some site investigation work and that at this point in time CFAC started decommissioning and demolition activities, as well as looking into site clean up through the implementation of a remedial investigation and feasibility-study work plan.

Ms. DeWitt explained how there are a lot of people from DEQ working on this site. This includes the hazardous waste program which was previously involved with CFAC because they were considered a large quantity hazardous waste generator, and with the demolition they have an administrative order of consent for the appropriate disposal of many of the regulated wastes. The asbestos control program is also busy working on the demolition because many of the buildings contained asbestos and need the appropriate permits. The open cut mining program is also involved because they're looking at a borrow source for soil to fill in some of the areas where demolition is being done. Ms. DeWitt has also used Colleen Owen who previously worked in remediation and is in the DEQ Kalispell office for answering questions and who can be onsite when needed. Ms. DeWitt said that the Water Protection Bureau is also involved because of pollution discharge elimination system permits that have been in place that are looked at through the superfund process. She also said that since this has recently been listed as a superfund site, the state has a role as a support agency to the EPA who is the lead agency. Ms. DeWitt works closely with their remedial project manager who is out of Libby.

Ms. DeWitt continued, saying she was going to discuss some of the big activities that are going on right now. She said the biggest one that hits most of the news is the decommissioning and demolition and there is a lot of stuff coming out as things are being taken down and out of a 40 acre building, as well as other buildings associated with the reduction process. Ms. DeWitt also is going to discuss the work that she knows best and has to do with the superfund remedial investigation.

Ms. DeWitt started with the decommissioning and demo activities, which are looked at through the hazardous waste program at DEQ. In 2015 DEQ approved CFAC's waste management plan for removing and disposing all of the potliners in the 40 acre building, which are a listed hazardous waste of KO88 which is a number that EPA has assigned for that process. This number indicates how they're to be disposed of and they're working with the hazardous waste program to oversee it. Ms. DeWitt thinks this is the biggest portion of the demolition that's going to happen and they just started the removal in November, hoping that the first line might be done in April of 2017. They can only get 2 pots done per day because of their size. They work 7 days a week and have hired as many local citizens as possible to

help the community, hoping for all waste removal to be done in September 2018. Ms. DeWitt encouraged people to get a tour to see the actual size of the things that are being removed.

Ms. DeWitt continued, saying that at the end of November and working with the asbestos program there will be over a million pounds of non-regulated asbestos material removed from the facility which includes the other buildings across the site: the West Rectifier, Rod Mill Building, Paste Plant, Quonset Hut, West Aluminum Unloader, Compressor Building, Laboratory and Change House.

Ms. DeWitt next spoke about the site investigation and the superfund side of things, and how in 2015 there were some investigations conducted in the area because of concerns about environmental impacts. The investigations showed that there were a number of contaminants above background levels which came from the percolation ponds and the landfill areas. The contaminants were metals, cyanide and fluoride in the groundwater and down gradient and also above maximum contaminant levels (MCL). There were concerns that the groundwater had the potential to migrate into drinking water sources and/or to the Flathead River and Cedar Creek. Ms. DeWitt said the cyanide would come from the potliners they are taking out which are a federally listed waste.

Other concerns were

- Metals
- Organic compounds and hydrocarbons that could come from the landfill areas
- PCBs
- Pesticides

As a result of the investigation, Ms. DeWitt said the state tried to negotiate with CFAC to come to an administrative order on consent. The negotiations kind of broke down and were handed over to EPA. In 2015 Governor Bullock supported the listing of the superfund site and in September of 2016 it officially became a superfund site. Ms. DeWitt said there was a lot of public involvement and public comment, but the reasons for listing were contaminant concerns and threat to the rivers as well as threat to drinking water sources. Ms. DeWitt showed a map of the facility that showed Building 1 that they are in the process of demolishing. There is also a yellow line that delineates the boundary of the area being investigated as part of the remedial investigation.

Ms. DeWitt explained how originally the EPA had an administrative order on consent as well with CFAC to begin studies of a remedial investigation. She said this is underway and the state is involved in the process of reviewing the work plan and submitting comments. The idea is to go out and assess the site conditions to know what the nature and extent is of any contamination so they can decide what an appropriate cleanup is going to be. Last year, Phase I of the remedial investigation took place. She explained how they are looking at the investigation in phases partly due to the size of the area being more than 200 acres. They would like to get an idea of the outer boundaries of where things are and be able to go back and be able to refine the information and get more data.

Ms. DeWitt said the work plan was done in 2015 and they were in the field collecting samples in 2016. The rest of Ms. DeWitt's slideshow summarized the work that was done, starting with 2016 and the process of characterizing the contamination left from the aluminum smelter.

- Passive soil gas sampling
- Soil boring and soil sample collection
- Monitoring wells installed

- Groundwater and surface water sampling
- Sediment sampling
- Ground Penetrating Radar (GPR) surveys to look at the extent of the landfill

Ms. DeWitt said that part of the reason for the soil gas surveys was to ensure well drillers' safety. They did some field screening and collected soil gas samples in a variety of areas, including the former vehicle fueling area and at the former hazardous waste drum storage area. They did about 126 soil borings and collected soil samples at varying depths, sampling for the metals, cyanide and fluoride and all the contaminants. They also collected an additional 51 surface and shallow soil samples to get a full characterization of the area.

They installed 43 monitoring wells and got groundwater samples from September and December to get temporal ideas of groundwater flow and water quality and the presence or absence of contaminants. They have also looked at doing surface water and sediment sampling. They sampled Cedar Creek, the Flathead River and the Cedar Creek Reservoir Overflow Ditch. These areas were sampled in August and September of 2016 and in some of the areas where there was water present they did samples in June with concern that by August that water would be dried up.

GPR was used on the landfills to look at the horizontal and vertical extent of contamination in the landfills to see how deep the caps should be. Currently they are summarizing all the data that was collected and a draft of the summary report should be coming in the next month or two. Once it is done DEQ will comment on it and the data will be used to define further investigations as needed to determine what an overall remedy is going to be.

Ms. DeWitt added that one thing that has been rather interesting with the project is making sure that the superfund investigation doesn't get run over by the demolition activities and coordinating both. She said that there may be further investigation in areas where buildings have been demolished.

Ms. DeWitt asked if there were any questions. Mr. Wendland asked about the disposal of the materials and wondered if it was in the landfill that she showed in her presentation. Ms. DeWitt said the material coming out of all the buildings in being shipped to an approved disposal facility, that none of the demolition materials and or hazardous waste is being disposed of on-site. She said it's all being taken away, recycled when possible or going to a hazardous waste facility. Ms. DeWitt said the areas that they are looking at, the old landfills are the ones that have been in place for the activities from 1955 to 2015.

Mr. Wendland next asked if there were any water samples done in those years that they are comparing the current samples to. Ms. DeWitt answered yes, that there are other water samples that they have gone back to look at historically. She noted that the Columbia Falls water supply is sampled periodically and does not appear to be impacted; the residence wells once in a while show cyanide. It's never over the standard but DEQ keeps an eye on this. She said no other drinking water wells appear to be impacted, but they will continue to watch this using the large network of groundwater monitoring wells to have a better understanding of where contaminants are going and cut that off.

Mr. Selch said that one thing he noticed when he toured the site is the berm area along the Flathead River below the site that was used as a waste disposal area. He wondered if they have done extensive sampling in that area because it seemed to be an area of concern. Ms. DeWitt confirmed it is an area of concern and that a number of sampling was done in that area, so those samples will be reflected in the report.

Ms. Kathleen Williams next asked what would be the future use of the site, who owns it and what was the distribution of funding for this effort. Ms. DeWitt said that the site is owned by CFAC and that the future use was up to them. This is something that the agencies will need to discuss with them as they determine the appropriate levels of cleanup. She said it's hard to dictate what a private owner can do with their site but that they can make sure that whatever remedy they choose is protective of what uses CFAC anticipates. Ms. DeWitt said that CFAC is not really sure what they want to do yet, and that the funding source for all the ongoing work is also CFAC. She said they are a viable company and hopes that they continue to be in order to provide the funding. The work that Ms. DeWitt does from the federal superfund site point of view is funded through EPA, who cost-recovers from CFAC. For the demolition work, Ms. DeWitt knows that CFAC has contracted with a company call Calbag to do the demolition.

Ms. Williams said that if CFAC doesn't know what the future use will be, that the remedy will have to be what's most protective. She gave the scenario of subdividing and building homes with individual wells. Ms. DeWitt agreed, saying this will be a discussion EPA and the State will continue to have with CFAC as they move forward with the cleanup process. She said if there is any anticipation of it being a residential area, a residential cleanup will be required.

The meeting moved onto the second briefing item.

Beaverhead River Turbidity

Mr. Selch is familiar with this topic and wanted to give some background before Mr. Darrin Kron spoke. Mr. Selch said that in Fall of 2014, he received a call from their (FWP's) biologist down in Dillon saying that Clark Canyon and the Beaverhead were running turbid and he was wondering what was going on. This had never happened before so Mr. Selch didn't have any data other than some bureau of reclamation data from several decades ago and he decided to go there and collect some baseline data in case it happened again so they'd have something to compare it to. In 2015 Mr. Selch initiated a limnology study to look at the water clarity in Clark Canyon, throughout the reservoir and in the Upper Beaverhead. Two weeks after Mr. Selch's first sample it turned worse that the year before, so he contacted Mr. Kron at DEQ who took the lead on the data collection in 2016.

Mr. Kron said this has been a collaboration between DEQ and FWP, as well as the Bureau of Reclamation and that the 2015 objective was to characterize things in case it were to happen again. Then the objectives for 2016 expanded to figuring out what is causing this turbidity in the bottom of Clark Canyon Reservoir and thus coming out into the Beaverhead River. Mr. Kron said it's really affecting fishability on the Beaverhead River where a lot of outfitters depend on the clear tail water during runoff. In the past there have been times when other rivers are naturally turbid during runoff and the Beaverhead has been a reprieve.

Mr. Kron gave a background of the 2016 timeline of events.

- DEQ coordinated with FWP drafting a sampling plan. Completed in early May.
- Began monitoring mid-May.
- Again in the end of June there was a slightly turbid river for a week which partially subsided.
- Early to mid-July the turbidity came back full force, with pulses through mid-September.
- There were also algae blooms in Clark Canyon Reservoir which is nothing new, but Mr. Kron's group is also studying this.
- Monitoring ended mid to late October.

Mr. Kron's group is now crunching the data and his slideshow is more of an update on the project's progress and where they're going with it. He said there is a presentation scheduled for February 7th in Dillon that his group is prepping for.

Mr. Kron said the site locations for monitoring were the 2 major tributaries, Red Rock River and Horse Prairie Creek where they enter the reservoir, along with 5 sites within the reservoir. They followed a 2 major tributary phase down to the face of the dam. Mr. Kron said he would speak mostly about Clark Canyon 1 site, which is right next to the dam face and that they also sampled the Beaverhead River below the dam.

Mr. Kron explained that during the monitoring timeframe of 2016, they monitored the water chemistry monthly, including nutrients, chlorophyll A, common ions, turbidity, TSS, and metals, along with a few other things. They also deployed continuous monitoring devices, which he will refer to as Sondes and they automatically collect turbidity, chlorophyll A, temperature, dissolved oxygen and pH at half-hour intervals. Mr. Kron said these were not put at all the sites on the reservoir, only near the dam face. But they also had one near the surface and one at the bottom of the reservoir at that site. They were also put in the two tributaries to the reservoir and the Beaverhead as well. Mr. Kron said there was some equipment malfunction that will be shown at the end of the presentation with data gaps in the graphs.

Mr. Kron's group was not sure the turbidity would occur again in 2016, but it did. They collected 40 liters of turbid water from the bottom of the reservoir, which is 30 meters down. This was sent to a lab for an x-ray diffraction analysis and an electron microscope scan. A weather station was also installed on the island of the reservoir.

Mr. Kron next laid out the objectives for 2016.

- Characterize nutrient and algae conditions in the reservoir.
- Characterize turbidity conditions in the reservoir and the Beaverhead River.
- Determine what mechanisms are causing the bottom of the reservoir to be turbid in both.
- Provide information for further discussion about remedies.

Mr. Kron explained their hypothesis testing and a few ideas for the cause of the turbidity in the bottom of the reservoir.

- They wondered if the active algae blooms were somehow linked: Not Likely
- Chemical reaction precipitating out calcium carbonate that's slowly sinking to the bottom: Not likely, but still testing this hypothesis.
- A combo of water movement in the bottom of the reservoir and a full dead pool, where the sediment has come up close to the outlet structure. As opposed to when the reservoir was built there was over 100 acre feet or more of water below this point. Reservoir is filling with sediment and also being looked at. Most likely
    - Looking at inflow and outflow data.
    - Reservoir stage influence.
- Weather influence: is this affecting water movement or some kind of weather operation. Most Likely
    - Maybe a secchi- long term wind pushing water onto one side of the reservoir and then it stops and it acts like a bathtub that has been perturbed with the water sloshing back and forth, creating velocities in the bottom of the reservoir. This happens in Lake Erie all the time. Most Likely

- Stratification of the reservoir and different heat layers and if they have any effect on turbidity production.

Mr. Kron and his group are in the middle of all this analysis. They just got all of their water chemistry back on December 23rd. They also received a reservoir-turbidity and sediment analysis draft report from the Georgia lab, and are also working on the Sonde data and reservoir physical condition data gathering and analysis, and weather station coordination analysis. They are also working with USGS on a reservoir chemistry dissolution analysis.

Mr. Kron has a technical review meeting scheduled for January 17th and 18th at DEQ with FWP reps and the Bureau of Reclamation to go over his group's results to give feedback and to get information on fishery conditions below the reservoir in the Beaverhead River. Mr. Kron again mentioned the public meeting scheduled in Dillon on February 7th at 6:30 pm to give a presentation on the causes of turbidity. He said they will also be working on a report that will come out in the spring.

Mr. Kron next reviewed some basic information.

	2015	**2016**
Fully stratified?	Yes	No- not a huge difference in temperature in upper layer vs. bottom.
Zero DO deep? When this goes down to zero causes Phosphorus release (next box).	Yes	No
Phosphorus release from deep sediment?	Likely	Not as likely
Algae Bloom? But not driven from the phosphorus release from deep sediment.	Yes	Yes
Blue-Green Algae?	Yes	Yes
Turbidity event?	Yes	Yes

- Internal nutrient cycling from sediment likely not the only driver of algae blooms
- Active algae blooms not significantly contributing to Beaverhead River Turbidity
- THIS IS ALL PRELIMINARY

Mr. Kron next showed slides regarding the Turbidity Sample that are Electron Microscope Scans that show a lot of diatom pieces and parts in the suspended material. The sediment samples from the bottom of the reservoir looked exactly the same. Mr. Kron said the Georgia lab is also doing an x-ray diffraction analysis to determine what the sediment turbidity is made out of.

Next, he covered depth profiles from August of 2016 showing the different sites at different depths and how the turbidity near the dam face skyrockets at the bottom of the reservoir. This is also happening in other areas of the reservoir, mostly in the deeper sites.

Mr. Kron said that Mr. Selch completed an analysis like this in 2015. Mr. Kron's group redid the analysis to try and figure out if the turbidity is inorganic, meaning rock-based or non-living material based. He pointed to the ISS portion and Detritus, which is anything that can be burned off of that sample so there are some organic components to this turbidity, too. Mr. Kron said there is little active phytoplankton.

Mr. Kron's next slide showed an analysis of the causes of the turbidity. (Next page)

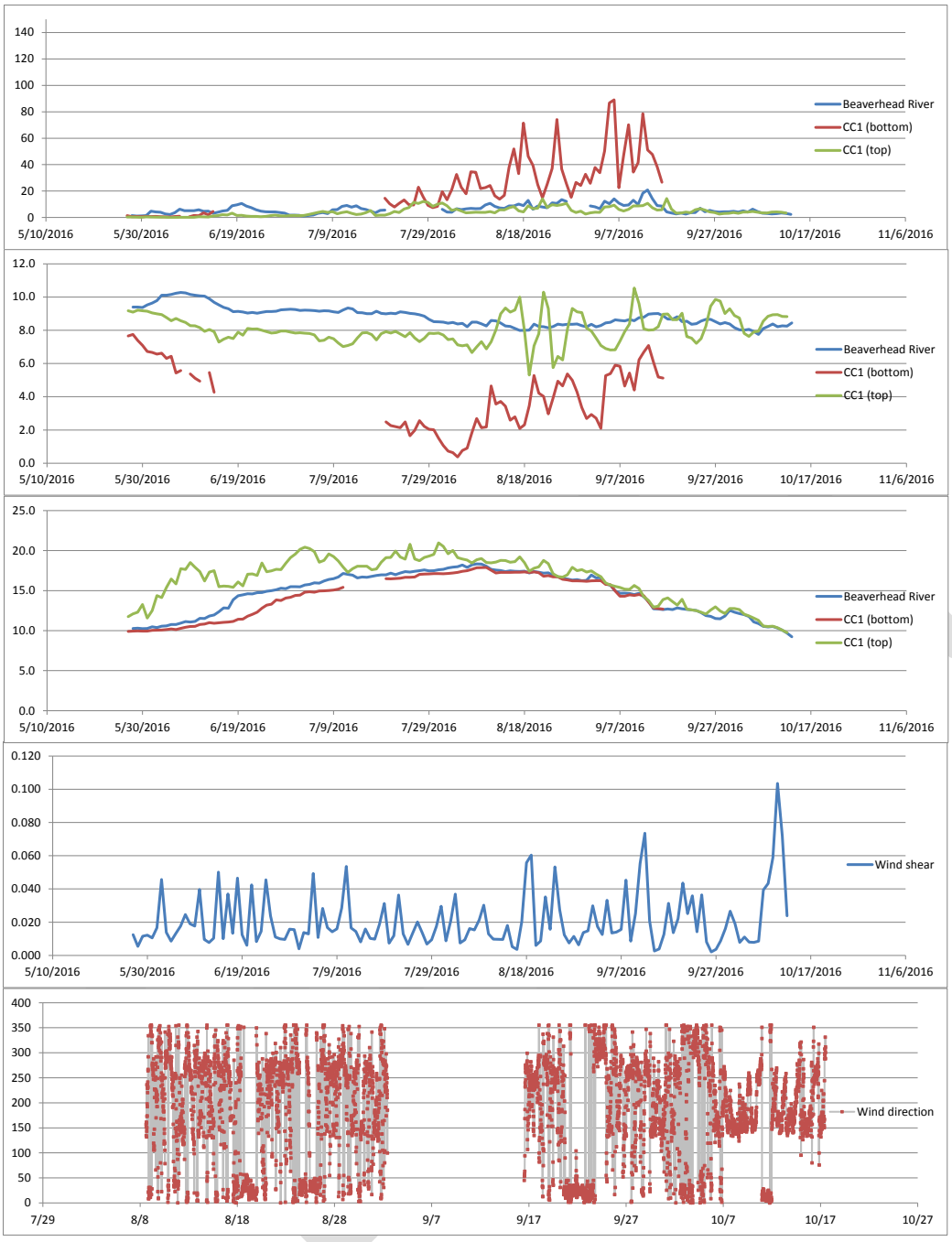
1st graph: The red is at the bottom of the reservoir and in front of the dam. It shows how high the turbidity is. The green is the top of the reservoir and the blue is the Beaverhead. This shows spiking at the bottom of the reservoir.

2nd graph: It's the same timeframe for dissolved oxygen and there are some mixing events happening. There is lower dissolved oxygen in the lower reservoir until the mixing events where the surface oxygen lowers and the bottom sample oxygen shoots up. Mr. Kron said there is some kind of mixing event going on at these points that correlates to turbidity.

3rd graph: Temperature, which isn't significant in this analysis.

4th graph: Wind speed, where at times you can see they line up with the turbidity events.

5th graph: Wind direction. Mr. Kron just wanted to show how these all relate. His group is doing statistical analyses comparing these conditions to figure out what's causing the turbidity.



Mr. Selch opened it up for questions.

Ms. Williams asked if the Bureau [of Reclamation] has been cooperative. Mr. Kron said they have prioritized a sedimentation study, looking at Clark Canyon Lake before Canyon Ferry. Divers were sent down to see how deep the sediment is off of the outlet structure. They are becoming more involved as they see the data. DEQ is trying to engage them more since the outcome is pointing more and more to the hypotheses where the fixes are not necessarily watershed-wide fixes. He said that it looks like an in-reservoir process which will become a bureau of reclamation topic of concern.

Ms. Williams asked if the reservoir has ever been dredged. Mr. Kron said it has not and was built in 1962. Ms. Williams asked if this is a result of sediment building up in the reservoir and being sucked out in the flow, if there is a solution. She thinks it would be dredging. Mr. Kron said that could be one solution, or the release pipe can be retrofitted to move vertically. Mr. Kron noted he's not an engineer and didn't want to get too far into remediation at this point, but that's what this study is for. He said DEQ management sees that that this on the horizon and are talking with the Bureau of Reclamation managers to step up their involvement in finding what to do about this. Mr. Kron thinks it's good timing for WPCAC to hear about this because it will probably become something more than scientists working on it.

Ms. Williams asked if the releases are exceeding standards downstream, if this was a violation. Mr. Kron is not sure if they are exceeding a standard which is a complex subject. State law says any dam built prior to 1973 and managed well and appropriately, it's naturally occurring. Mr. Kron said it will take some pressure to help the Bureau of Reclamation to see there needs to be some work done to meet this law. The Bureau will be at the public meeting.

Mr. Wendland said some of what Mr. Kron was saying was that the weather causes turbidity, which we have no control over. Mr. Kron said that what is occurring in the bottom of the reservoir could have been occurring for a long time, that it's just taken time to fill with sediment and come out the pipe. Mr. Selch added if it was moving across the bottom before it had the dead pool it would have settled down and there wouldn't have been the turbidity. Mr. Selch said some outfitters claim it's been happening for years, but he said not to this degree. He said in 2015 from June on it was unfishable. Mr. Wendland asked if it was causing fish kill. Mr. Selch said no, there is no evidence of reduced fitness with the brown trout. He said their biologist will speak more on this subject at the public meeting. Mr. Kron added that it's really a fishability and recreation issue, which is also a big economic issue. Mr. Wendland asked what the reservoir was built for. Mr. Selch said flood control and irrigation. He has also heard some people say that the reservoir would never be built today based on the water supply. Mr. Kron said the reservoir is being used for both recreation and agriculture, and the funding might have come from one source and justification from a number of uses. He repeated that the turbidity may be from a natural wind and that State law talks about reasonable dam operations, but that's difficult to define.

Ms. Williams said that dams usually eliminate the transport of sediment and wondered if there is a shortage of sediment downstream. She asked if it was possible that sediment could be a good thing because the dam has stopped the passage of sediment in the past. Mr. Selch said the sediment needs to be moved and that it typically occurs in that spring. If it is now moving sediment out and doing this in perpetuity, Mr. Selch doesn't think this will be accepted by those who recreate and make a living there. Mr. Kron added that it's different size fractions and timing that's the problem. Mr. Selch also said that there is a company looking to put hydro on the reservoir and working on their FERC license. He said he's glad this came up first so that everyone wasn't pointing fingers at them for the cause of turbidity. Mr. Kron said in past presentations in Dillon they have received questions about the FERC licensing. He said DEQ approved it with some conditions, which was appealed to the Board of Environmental Review.

Mr. Selch moved to the Action Items.

2017 Chair and Vice Chair Elections

Mr. Selch asked for nominations or volunteers. Mr. Wendland nominated Mr. Selch. Ms. Williams seconded the nomination. Mr. Selch asked for any other nominations. He next asked for Vice Chair nominations or volunteers. Ms. Williams nominated Mr. Earl Salley. Mr. Selch asked for a motion for

Chair and Vice Chair for 2017. Mr. Wendland moved for Mr. Selch as Chair and Mr. Salley as Vice Chair for 2017. There was no opposition. The motion carried.

2017 WPCAC Calendar

Ms. Steinmetz had emailed the dates and asked if anyone had problems with them. She picked the dates based on the document submittal deadlines for the BER. Ms. Sanchez had problems with the February and August dates. Ms. Steinmetz suggested February 17th instead of 24th. And for the August alternative she offered the 18th. The following dates were agreed to:

- February 17th
- April 28th
- July 7th
- August 18th
- November 3rd

Mr. Selch asked for a motion to accept the 2017 calendar dates. Mr. Wendland made the motion and Ms. Stevie Neuman seconded it. The motion carried.

Public Comment

No public present.

Agenda Items for Next Meeting

Ms. Steinmetz said that in the previous meeting Ms. Williams had asked if there are standards for a living thing. She will find someone from EPA to talk about this if there is still interest. Another item is the work for rulemaking for SB325 from the 2015 legislation session, which was the bill that stated that the Department can't implement water quality standards that are more stringent than the non-anthropogenic condition of a waterbody. DEQ continues to work with a stakeholder group over two pieces of the bill, the second having to do with variances for legacy contamination. The workgroup has solid rules drafted for that and some guidance to go along with it. They are still working on the first part that has to with natural and is a lot more complicated, but Ms. Steinmetz and Ms. Myla Kelly talked about briefing the council on this in February, and if not February, then April.

One other item Ms. Steinmetz also mentioned is if there are any water quality bills that come up in the legislature, DEQ can provide a briefing on them. She asked for any requests. There were none.

Mr. Selch looked for a motion to adjourn. Mr. Wendland approved.
The meeting adjourned at 11:12 a.m.